

$^{11}\text{B}(\text{d},\text{n})$ 1983Ne11,1968Aj02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu		NP A968, 71 (2017)	1-Jan-2017

- 1964Ku09: $^{11}\text{B}(\text{d},\text{N}-\gamma)$ $E_{\text{d}}=1.5\text{-}5.5$ MeV, measured σ .
- 1965Al17: $^{11}\text{B}(\text{d},\text{n})$ $E=1\text{-}11$ MeV, measured $\sigma(E, E_{\text{N}}, \theta)$.
- 1965Cl02: $^{11}\text{B}(\text{d}, N_0), (\text{d}, \text{n})$ $E=1.5\text{-}3$ MeV, measured $\sigma(E, \theta)$.
- 1965Si12, 1968Te03: $^{11}\text{B}(\text{d},\text{n})$ $E=1.1\text{-}3.2$ MeV, measured $\sigma(E, E_{\text{N}}, \theta)$, Q. ^{12}C deduced L.
- 1966Ma21: $^{11}\text{B}(\text{d},\text{n})$ $E=1.35$ to 18.5 MeV, measured N-polarization ($E_{\text{d}}, E_{\text{N}}, \theta$).
- 1967Di01: $^{11}\text{B}(\text{d},\text{n})$ $E=1.1$ to 2.9 MeV, measured $\sigma(E, E_{\text{N}})$.
- 1967Fu07: $^{11}\text{B}(\text{d},\text{n})$ $E=6$ MeV, measured $\sigma(E_{\text{N}}, \theta)$. ^{12}C deduced levels, L, S.
- 1969Mi20: $^{11}\text{B}(\text{d},\text{n})$ $E=2$ MeV, measured $\sigma(E_{\text{N}})$, $P_{\text{N}}(\theta)$.
- 1970Bu15: $^{11}\text{B}(\text{d},\text{n})$ $E=5.5$ MeV, measured $\sigma(\theta)$, $P_{\text{N}}(\theta)$.
- 1971Hi09: $^{11}\text{B}(\text{d},\text{n})$ $E_{\text{d}}=10.0, 11.8$ MeV, measured polarization parameter $iT_{11}(E_{\text{d}}, \theta)$, relative cross section $\sigma(E_{\text{d}}, \theta)$ for ^{12}C . ^{12}C level deduced J, π .
- 1971Mu18: $^{11}\text{B}(\text{d},\text{n})$ $E=11.8$ MeV, measured $\sigma(E_{\text{N}}, \theta)$. ^{12}C deduced absolute S.
- 1971Ri19: $^{11}\text{B}(\text{pol. d},\text{N})$ $E=900$ keV, measured analyzing power(θ).
- 1972Me06: $^{11}\text{B}(\text{d},\text{n})$ $E=2.6\text{-}4.0$ MeV, measured $P(E_{\text{N}}, \theta)$. DWBA comparison.
- 1972Se09: $^{11}\text{B}(\text{d},\text{n})$ $E=0.2\text{-}1.02$ MeV, analyzed polarization effects, resonant matrix elements.
- 1972Th14: $^{11}\text{B}(\text{d},n\gamma)$ $E=4\text{-}4.8$ MeV, $\theta_{\text{N}}=0^\circ$, measured $\sigma(E, E_{\text{N}}, E_{\gamma}, \theta_{n\gamma})$. Deduced stripping reduced width amplitudes.
- 1974An19: $^{11}\text{B}(\text{d},\text{n})$ $E=6$ MeV, measured $\sigma(E_{\text{N}}, \theta)$. ^{12}C levels deduced p-width, γ -width, S.
- 1974Th02: $^{11}\text{B}(\text{d},\text{n})$ $E=5.47, 5.34$ MeV, measured N-polarization(θ).
- 1975Si22: $^{11}\text{B}(\text{d},\text{n})$ $E=0.9, 1.2$ MeV, measured polarization. Deduced reaction mechanism.
- 1981An16: $^{11}\text{B}(\text{d},\text{n})$ $E=7\text{-}16$ MeV, measured $\sigma(E)$, thick target yields.
- 1983Ne11, 1985NeZZ: $^{11}\text{B}(\text{d},\text{n})$ $E=12$ MeV, measured $\sigma(E_{\text{N}})$, $\sigma(\theta)$. ^{12}C deduced levels, J, π , T, S. DWBA analysis.
- 1984Ol06: $^{11}\text{B}(\text{d},\text{n})$ $E=5$ MeV, measured $\sigma(E_{\text{N}})$.
- 1985Fo05: $^{11}\text{B}(\text{d},\text{n})$ $E=79$ MeV, measured $\sigma(\theta)$. Deduced deuteron optical model parameters. ^{12}C levels deduced L, S. DWBA analysis.
- 1987Fo22: $^{11}\text{B}(\text{pol d},\text{N})$ $E=79$ MeV, measured $\sigma(\theta)$, vector analyzing power vs θ . Deduced ^2H D-state effects role. DWBA analysis.
- 2001Ho23: $^{11}\text{B}(\text{d},\text{n})$ $E=24\text{-}111$ keV, measured σ , S-factor.
- 2001Mi09: $^{11}\text{B}(\text{d},\text{n})$ $E=19.1$ MeV, measured E_{γ} , I_{γ} . Deduced efficiency of germanium cluster detector.
- 2006Pa27: $^{11}\text{B}(\text{d},\text{n})$ $E=120\text{-}160$ keV, measured E_{n} , yields, angular distributions. Deduced astrophysical S-factors.
- See (1980Aj01) for spectroscopic factors.

 ^{12}C Levels

E(level)	J^{π}	L_P^{\dagger}	θ^2	Comments
0		1	0.11	
$4.38 \times 10^3 \#$	7	1	0.03	
$7.57 \times 10^3 \#$	11			
$9.6 \times 10^3 \#$	1	2	0.02	
$10.8 \times 10^3 \#$	1	0		Decays mainly via α_0 (1965Ol01).
$11.1 \times 10^3 \#$	1			
$11.74 \times 10^3 \#$	8	0		Decays via $\alpha_0(10\%)$ and $\alpha_1(90\%)$ (1965Ol01).
$12.76 \times 10^3 \#$	8	1 ⁺	1	Decays via α_1 (1965Ol01).
$13.36 \times 10^3 \#$	5			$E_x=13.21$ MeV 5 and 13.36 MeV 5 are given in (1968Aj02) Table 12.12 footnotes with a comment that the two groups may represent one state.
$14.16 \times 10^3 \#$	5			
15110	3	1		$E_x=15.110$ MeV 3 is given in the (1968Aj02) Table 12.12 footnotes with no reference.
$15.52 \times 10^3 \#$	3			

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$^{11}\text{B}(\text{d},\text{n}) \quad 1983\text{Ne11,1968Aj02}$ (continued)

^{12}C Levels (continued)

E(level)	J ^π	Γ	L _P [†]	Comments
$16.07 \times 10^3 \#$ 3			1	Decays via $\alpha_0(3\%)$ and $\alpha_1(97\%)$ (1985Ne01).
$17.23 \times 10^3 \#$				
$18.38 \times 10^3 \pm @$ 6	3 ⁻	$220 \pm$ keV 50		These unresolved groups decay via $\alpha_0(5\%)$, $\alpha_1(32\%)$, $p_0(63\%)$ (1983Ne11,1985Ne01).
$18.38 \times 10^3 \pm @$ 6	2 ⁻	$350 \pm$ keV 50		
$19.55 \times 10^3 @$ 5		575 keV 60		Decays via $\alpha_0(1\%)$, $\alpha_1(41\%)$, $p_0(52\%)$, $p_1(6\%)$ (1983Ne11,1985Ne01).
$20.62 \times 10^3 @$ 6		525 keV 60		Decays via $\alpha_0(2\%)$, $\alpha_1(30\%)$, $p_0(56\%)$, $p_1(12\%)$ (1983Ne11,1985Ne01).

[†] See references in ([1968Aj02](#)) Table 12.12.

[‡] ([1983Ne11](#)) find that the group at $E_x=18.38$ MeV is due to unresolved states with $J^\pi;T=3^-;1$ and $2^-;0+1$. $\Gamma(3^-)=220$ keV 50 is from ([1971Re03](#)) while $\Gamma(2^-)$ is from ([1983Ne11,1985Ne01](#)).

[#] From ([1952Jo10,1954Gr53,1957Bi78](#) and Rosier et al., Congres Int. de Phys. Nucl., Paris, 1964); see ([1968Aj02](#)) Table 12.12.

[@] From ([1983Ne11](#)).